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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,868	06/21/2001	J. Richard Aylward	02103-413001/ AABOSS37	6086

26162 7590 08/02/2005

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EXAMINER	
PENDLETON, BRIAN T	

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/886,868	AYLWARD ET AL.	
	Examiner	Art Unit	
	Brian T. Pendleton	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-54* is/are pending in the application.

4a) Of the above claim(s) *7,10,24,25,28-45 and 50-53* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,13-19,26, 27,46, 47, 54* is/are rejected.

7)☒ Claim(s) *8,9,11,12,20-23,48 and 49* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 4/21/01 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of group I, species I in the reply filed on 4/1/05 is acknowledged. The traversal is on the ground(s) that Examiner has made no showing that the inventions are independent and distinct and that the search would be burdensome. This is not found persuasive because Applicant has claimed three different parts of a complete system wherein each of the parts has separate use. The audio system of Group I is directed to frequency control of audio signals while Group II is directed to directionally transducing signals. Although, audio signal processing is common to both groups, their search would be distinct. Applicant calls for a statement that each group is patentable over the other and it is the Examiner's contention that the claimed subject matter of claim 28 does not read or is obvious over claim 1. To suggest that the claims read on each other is unreasonable. Furthermore, group III is directed to head related transfer processing of signals. It is also unreasonable to deem head related transfer function processing as related to scaling and filtering signals as in Group I or directionally transducing signals as in Group II. The main assertion of the Applicant is that all inventions should be searched because there is no serious burden and search of one group is "likely" to disclose subject matter of another group, but it is the Examiner's judgment that the search is burdensome because three components (all 54 claims) of a system are claimed individually, which is evidence that the Applicant considers the independent components patentable in their own right.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Aylward, US Patent 6,711,266.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Aylward discloses a surround sound processing circuit in figure 13 comprising first audio signal Lt, second audio signal Rt, band pass filters 201A-201N and 202A-202N, whereby band pass filters 201A-201N divide the first audio signal into a first spectral band signal and a second spectral band signal. The spectral band signals are scaled by 101A-101N, whereby all the scaling factors A2 are proportional to the amplitude of the second audio signal. The signals are associated with directional channels (per claim 3).

Claims 1-3, 26, and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Gates, US Patent 5,251,260. Gates discloses in figure 2a an audio system comprising first and second

audio signals L+R, L-R; filters 450, 472 for dividing the L-R signal into two spectral bands; and voltage controlled amplifiers 452 and 474 for scaling the first and second spectral band signals. Both scaling factors are proportional to the L-R signal and the L+R signal. Claims 1-3 and 46 are met.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4-6, 13-19, 27, 47, 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gates in view of Kohut et al, US Patent 6,154,545. Gates does not disclose filtering the first and second signal portions by a first and second filter. Kohut et al disclose a surround sound processing system comprising a plurality of input channels (see figures 1A) including a left surround channel and right surround channel, both channels of which are subject to head related transfer function processing (which are filters). See figure 3. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Gates to filter the L+R and L-R signals, which are surround sound channels, as taught by Kohut et al for the purpose of enhancing the surround sound effects. As to claims 5 and 13, it was obvious to scale the signals in question by the claimed formula for the express intent of balancing the magnitudes of the signals. As to claim 27, balancing magnitudes would have included summing the scaling factors to one. Per claims 6 and 15, head related transfer functions inherently have frequency responses and time delay effects similar to that of a human head. As to claims 16-19, the HRTF elements

base their responses on sound waves arriving from the front and the rear of the human head. It would have been obvious to one of ordinary skill in the art at the time of invention that the combination of Gates and Kohut would be modified according to which sound waves from the signals are to be placed in front of the user or to the rear of the user. Per claim 54, HRTF processing would automatically delay one signal with respect to the other.

Allowable Subject Matter

Claims 8, 9, 11, 12, 20-22, 23, 48, 49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Waller, Jr., US Patent 6,198,827.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (571) 272-7527. The examiner can normally be reached on M-F 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian T. Pendleton
Examiner
Art Unit 2644

btp